Problem 10.A: You should learn to identify principal axes by looking at the symmetry of an object. The object on the left in the figure below is "football" shaped, and viewed at an oblique angle. One of the principal axes has been drawn. (a) Sketch the other two principal axes on the left-hand figure.

(b) I now glue a small ball bearing to the "equator" of the football at the position shown in the right-hand figure. This changes the symmetry and the original principal axes no longer apply. Draw new principal axes on the right-hand figure to show how this affects the choice of principal axes.

Problem 10.B: Do problem 10.37, but with the following helpful hints. (1) Use your result from problem 10.23 to reduce the number of inertial moments you have to consider. (2) We did not get to the part of the lecture for finding principal axes by eigenvalues and eigenvectors, but look over example 10.4 on pg. 390. We will use eigenvalues and eigenvectors extensively in Chapter 11, so it is well worthwhile to learn this approach now!